

**[DISCUSSION DRAFT]**

SEPTEMBER 28, 2003

1           **TITLE VIII—HYDROGEN**

2   **SEC. 801. DEFINITIONS.**

3       In this title:

4           (1) The term “Advisory Committee” means the  
5       Hydrogen Technical and Fuel Cell Advisory Com-  
6       mittee established under section 805.

7           (2) The term “Department” means the Depart-  
8       ment of Energy.

9           (3) The term “fuel cell” means a device that di-  
10      rectly converts the chemical energy of a fuel and an  
11      oxidant into electricity by an electrochemical process  
12      taking place at separate electrodes in the device.

13          (4) The term “infrastructure” means the equip-  
14      ment, systems, or facilities used to produce, dis-  
15      tribute, deliver, or store hydrogen.

16          (5) The term “light duty vehicle” means a car  
17      or truck classified by the Department of Transpor-  
18      tation as a Class I or IIA vehicle.

19          (6) The term “Secretary” means the Secretary  
20      of Energy.

21   **SEC. 802. PLAN.**

22       Not later than six months after the date of enactment  
23      of this Act, the Secretary shall transmit to the Congress

1 a coordinated plan for the programs described in this title  
2 and any other programs of the Department that are di-  
3 rectly related to fuel cells or hydrogen. The plan shall de-  
4 scribe, at a minimum—

5 (1) the agenda for the next five years for the  
6 programs authorized under this title, including the  
7 agenda for each activity enumerated in section  
8 803(a);

9 (2) the types of entities that will carry out the  
10 activities under this title and what role each entity  
11 is expected to play;

12 (3) the milestones that will be used to evaluate  
13 the programs for the next five years;

14 (4) the most significant technical and nontech-  
15 nical hurdles that stand in the way of achieving the  
16 goals described in section 803(b), and how the pro-  
17 grams will address those hurdles; and

18 (5) the policy assumptions that are implicit in  
19 the plan, including any assumptions that would af-  
20 fect the sources of hydrogen or the marketability of  
21 hydrogen-related products.

22 **SEC. 803. PROGRAM.**

23 (a) **ACTIVITIES.**—The Secretary, in partnership with  
24 the private sector, shall conduct programs to address—

1           (1) production of hydrogen from diverse energy  
2       sources, including—

3           (A) fossil fuels, which may include carbon  
4       capture and sequestration;

5           (B) hydrogen-carrier fuels (including eth-  
6       anol and methanol);

7           (C) renewable energy resources, including  
8       biomass; and

9           (D) nuclear energy;

10          (2) use of hydrogen for commercial, industrial,  
11       and residential electric power generation;

12          (3) safe delivery of hydrogen or hydrogen-car-  
13       rier fuels, including—

14           (A) transmission by pipeline and other dis-  
15       tribution methods; and

16           (B) convenient and economic refueling of  
17       vehicles either at central refueling stations or  
18       through distributed on-site generation;

19          (4) advanced vehicle technologies, including—

20           (A) engine and emission control systems;

21           (B) energy storage, electric propulsion, and  
22       hybrid systems;

23           (C) automotive materials; and

24           (D) other advanced vehicle technologies;

1           (5) storage of hydrogen or hydrogen-carrier  
2       fuels, including development of materials for safe  
3       and economic storage in gaseous, liquid, or solid  
4       form at refueling facilities and onboard vehicles;

5           (6) development of safe, durable, affordable,  
6       and efficient fuel cells, including fuel-flexible fuel cell  
7       power systems, improved manufacturing processes,  
8       high-temperature membranes, cost-effective fuel  
9       processing for natural gas, fuel cell stack and system  
10      reliability, low temperature operation, and cold start  
11      capability;

12          (7) development, after consultation with the pri-  
13      vate sector, of necessary codes and standards (in-  
14      cluding international codes and standards and vol-  
15      untary consensus standards adopted in accordance  
16      with OMB Circular A-119) and safety practices for  
17      the production, distribution, storage, and use of hy-  
18      drogen, hydrogen-carrier fuels, and related products;

19          (8) a public education program to develop im-  
20      proved knowledge and acceptability of hydrogen-  
21      based systems; and

22          (9) research, development, and demonstration  
23      activities necessary to meet program goals.

24      (b) PROGRAM GOALS.—

1           (1) VEHICLES.—For vehicles, the goals of the  
2       program are—

3           (A) to enable a commitment by auto-  
4       makers no later than year 2015 to offer safe,  
5       affordable, and technically viable hydrogen fuel  
6       cell vehicles in the mass consumer market; and

7           (B) to enable production, delivery, and ac-  
8       ceptance by consumers of model year 2020 hy-  
9       drogen fuel cell and other vehicles that will  
10      have—

11           (i) a range of at least 300 miles;

12           (ii) improved performance and ease of  
13      driving;

14           (iii) safety and performance com-  
15      parable to vehicle technologies in the mar-  
16      ket; and

17           (iv) when compared to light duty vehi-  
18      cles in model year 2003—

19           (I) fuel economy that is substan-  
20      tially higher;

21           (II) substantially lower emissions  
22      of criteria air pollutants; and

23           (III) equivalent or improved vehi-  
24      cle fuel system crash integrity and oc-  
25      cupant protection.

1           (2) HYDROGEN ENERGY AND ENERGY INFRA-  
2           STRUCTURE.—For hydrogen energy and energy in-  
3           frastructure, the goals of the program are to enable  
4           a commitment not later than 2015 that will lead to  
5           infrastructure by 2020 that will provide—

6                   (A) safe and convenient refueling;

7                   (B) improved overall efficiency;

8                   (C) widespread availability of hydrogen  
9           from domestic energy sources through—

10                   (i) production, with consideration of  
11           emissions levels;

12                   (ii) delivery, including transmission by  
13           pipeline and other distribution methods for  
14           hydrogen; and

15                   (iii) storage, including storage in sur-  
16           face transportation vehicles;

17                   (D) hydrogen for fuel cells, internal com-  
18           bustion engines, and other energy conversion  
19           devices for portable, stationary, and transpor-  
20           tation applications; and

21                   (E) other technologies consistent with the  
22           Department's plan.

23           (3) FUEL CELLS.—The goals for fuel cells and  
24           their portable, stationary, and transportation appli-  
25           cations are to enable—

1 (A) safe, economical, and environmentally  
2 sound hydrogen fuel cells;

3 (B) fuel cells for light duty and other vehi-  
4 cles; and

5 (C) other technologies consistent with the  
6 Department's plan.

7 (c) DEMONSTRATION.—In carrying out the program  
8 under this section, the Secretary shall fund a limited num-  
9 ber of demonstration projects, consistent with a deter-  
10 mination of the maturity, cost-effectiveness, and environ-  
11 mental impacts of technologies supporting each project. In  
12 selecting projects under this subsection, the Secretary  
13 shall, to the extent practicable and in the public interest,  
14 select projects that—

15 (1) involve using hydrogen and related products  
16 at facilities or installations that would exist without  
17 the demonstration program, such as existing office  
18 buildings, military bases, vehicle fleet centers, tran-  
19 sit bus authorities, or units of the National Park  
20 System;

21 (2) depend on reliable power from hydrogen to  
22 carry out essential activities;

23 (3) lead to the replication of hydrogen tech-  
24 nologies and draw such technologies into the market-  
25 place;

1           (4) include vehicle, portable, and stationary  
2       demonstrations of fuel cell and hydrogen-based en-  
3       ergy technologies;

4           (5) address the interdependency of demand for  
5       hydrogen fuel cell applications and hydrogen fuel in-  
6       frastructure;

7           (6) raise awareness of hydrogen technology  
8       among the public;

9           (7) facilitate identification of an optimum tech-  
10      nology among competing alternatives;

11          (8) address distributed generation using renew-  
12      able sources; and

13          (9) address applications specific to rural or re-  
14      mote locations, including isolated villages and is-  
15      lands, the National Park system, and tribal entities.

16      (d) DEPLOYMENT.—In carrying out the program  
17      under this section, the Secretary shall, in partnership with  
18      the private sector, conduct activities to facilitate the de-  
19      ployment of hydrogen energy and energy infrastructure,  
20      fuel cells, and advanced vehicle technologies.

21      (e) FUNDING.—(1) The Secretary shall carry out the  
22      program under this section using a competitive, merit-re-  
23      view process and consistent with the generally applicable  
24      Federal laws and regulations governing awards of finan-  
25      cial assistance, contracts, or other agreements.



1       (2) Activities under this section may be carried out  
2 by funding nationally recognized university-based or Fed-  
3 eral laboratory research centers.

4       (f) COST SHARING.—The cost sharing provisions of  
5 section 3002 of the Energy Policy Act of 1992 (42 U.S.C.  
6 13542) shall apply to research, development, demonstra-  
7 tion, and commercial application projects carried out  
8 through grants, cooperative agreements, or contracts  
9 under this title. The discretion of the Secretary to reduce  
10 or eliminate the non-Federal cost sharing requirement  
11 provided in section 3002 shall also apply to technical anal-  
12 yses and educational activities.

13       (g) DISCLOSURE.—Section 623 of the Energy Policy  
14 Act of 1992 (42 U.S.C. 13293) relating to the protection  
15 of information shall apply to projects carried out through  
16 grants, cooperative agreements, or contracts under this  
17 title.

18 **SEC. 804. INTERAGENCY TASK FORCE.**

19       (a) ESTABLISHMENT.—Not later than 120 days after  
20 the date of enactment of this Act, the President shall es-  
21 tablish an interagency task force chaired by the Secretary  
22 or his designee with representatives from each of the fol-  
23 lowing:

24               (1) The Office of Science and Technology Pol-  
25 icy within the Executive Office of the President.

1 (2) The Department of Transportation.

2 (3) The Department of Defense.

3 (4) The Department of Commerce (including  
4 the National Institute of Standards and Tech-  
5 nology).

6 (5) The Department of State.

7 (6) The Environmental Protection Agency.

8 (7) The National Aeronautics and Space Ad-  
9 ministration.

10 (8) Other Federal agencies as the Secretary de-  
11 termines appropriate.

12 (b) DUTIES.—

13 (1) PLANNING.—The interagency task force  
14 shall work toward—

15 (A) a safe, economical, and environ-  
16 mentally sound fuel infrastructure for hydrogen  
17 and hydrogen-carrier fuels, including an infra-  
18 structure that supports buses and other fleet  
19 transportation;

20 (B) fuel cells in government and other ap-  
21 plications, including portable, stationary, and  
22 transportation applications;

23 (C) distributed power generation, including  
24 the generation of combined heat, power, and  
25 clean fuels including hydrogen;

1 (D) uniform hydrogen codes, standards,  
2 and safety protocols; and

3 (E) vehicle hydrogen fuel system integrity  
4 safety performance.

5 (2) ACTIVITIES.—The interagency task force  
6 may organize workshops and conferences, may issue  
7 publications, and may create databases to carry out  
8 its duties. The interagency task force shall—

9 (A) foster the exchange of generic, non-  
10 proprietary information and technology among  
11 industry, academia, and government;

12 (B) develop and maintain an inventory and  
13 assessment of hydrogen, fuel cells, and other  
14 advanced technologies, including the commercial  
15 capability of each technology for the economic  
16 and environmentally safe production, distribu-  
17 tion, delivery, storage, and use of hydrogen;

18 (C) integrate technical and other informa-  
19 tion made available as a result of the programs  
20 and activities under this title;

21 (D) promote the marketplace introduction  
22 of infrastructure for hydrogen fuel vehicles; and

23 (E) conduct an education program to pro-  
24 vide hydrogen and fuel cell information to po-  
25 tential end-users.

1 (c) AGENCY COOPERATION.—The heads of all agen-  
2 cies, including those whose agencies are not represented  
3 on the interagency task force, shall cooperate with and  
4 furnish information to the interagency task force, the Ad-  
5 visory Committee, and the Department.

6 **SEC. 805. ADVISORY COMMITTEE.**

7 (a) ESTABLISHMENT.—The Hydrogen Technical and  
8 Fuel Cell Advisory Committee is established to advise the  
9 Secretary on the programs and activities under this title.

10 (b) MEMBERSHIP.—

11 (1) MEMBERS.—The Advisory Committee shall  
12 be comprised of not fewer than 12 nor more than 25  
13 members. The members shall be appointed by the  
14 Secretary to represent domestic industry, academia,  
15 professional societies, government agencies, Federal  
16 laboratories, previous advisory panels, and financial,  
17 environmental, and other appropriate organizations  
18 based on the Department's assessment of the tech-  
19 nical and other qualifications of committee members  
20 and the needs of the Advisory Committee.

21 (2) TERMS.—The term of a member of the Ad-  
22 visory Committee shall not be more than 3 years.  
23 The Secretary may appoint members of the Advisory  
24 Committee in a manner that allows the terms of the  
25 members serving at any time to expire at spaced in-

1       tervals so as to ensure continuity in the functioning  
2       of the Advisory Committee. A member of the Advi-  
3       sory Committee whose term is expiring may be re-  
4       appointed.

5           (3) CHAIRPERSON.—The Advisory Committee  
6       shall have a chairperson, who is elected by the mem-  
7       bers from among their number.

8       (c) REVIEW.—The Advisory Committee shall review  
9       and make recommendations to the Secretary on—

10           (1) the implementation of programs and activi-  
11       ties under this title;

12           (2) the safety, economical, and environmental  
13       consequences of technologies for the production, dis-  
14       tribution, delivery, storage, or use of hydrogen en-  
15       ergy and fuel cells; and

16           (3) the plan under section 802.

17       (d) RESPONSE.—(1) The Secretary shall consider,  
18       but need not adopt, any recommendations of the Advisory  
19       Committee under subsection (c).

20           (2) The Secretary shall transmit a biennial report to  
21       the Congress describing any recommendations made by  
22       the Advisory Committee since the previous report. The re-  
23       port shall include a description of how the Secretary has  
24       implemented or plans to implement the recommendations,  
25       or an explanation of the reasons that a recommendation

1 will not be implemented. The report shall be transmitted  
2 along with the President's budget proposal.

3 (e) SUPPORT.—The Secretary shall provide resources  
4 necessary in the judgment of the Secretary for the Advi-  
5 sory Committee to carry out its responsibilities under this  
6 title.

7 **SEC. 806. EXTERNAL REVIEW.**

8 (a) PLAN.—The Secretary shall enter into an ar-  
9 rangement with the National Academy of Sciences to re-  
10 view the plan prepared under section 802, which shall be  
11 completed not later than six months after the Academy  
12 receives the plan. Not later than 45 days after receiving  
13 the review, the Secretary shall transmit the review to the  
14 Congress along with a plan to implement the review's rec-  
15 ommendations or an explanation of the reasons that a rec-  
16 ommendation will not be implemented.

17 (b) ADDITIONAL REVIEW.—The Secretary shall enter  
18 into an arrangement with the National Academy of  
19 Sciences under which the Academy will review the pro-  
20 gram under section 803 during the fourth year following  
21 the date of enactment of this Act. The Academy's review  
22 shall include the research priorities and technical mile-  
23 stones, and evaluate the progress toward achieving them.  
24 The review shall be completed no later than five years  
25 after the date of enactment of this Act. Not later than

1 45 days after receiving the review, the Secretary shall  
2 transmit the review to the Congress along with a plan to  
3 implement the review's recommendations or an expla-  
4 nation for the reasons that a recommendation will not be  
5 implemented.

6 **SEC. 807. MISCELLANEOUS PROVISIONS.**

7 (a) REPRESENTATION.—The Secretary may rep-  
8 resent the United States interests with respect to activities  
9 and programs under this title, in coordination with the  
10 Department of Transportation, the National Institute of  
11 Standards and Technology, and other relevant Federal  
12 agencies, before governments and nongovernmental orga-  
13 nizations including—

14 (1) other Federal, State, regional, and local  
15 governments and their representatives;

16 (2) industry and its representatives, including  
17 members of the energy and transportation indus-  
18 tries; and

19 (3) in consultation with the Department of  
20 State, foreign governments and their representatives  
21 including international organizations.

22 (b) REGULATORY AUTHORITY.—Nothing in this title  
23 shall be construed to alter the regulatory authority of the  
24 Department.

1   **SEC. 808. SAVINGS CLAUSE.**

2           Nothing in this title shall be construed to affect the  
3 authority of the Secretary of Transportation that may  
4 exist prior to the date of enactment of this Act with re-  
5 spect to—

6           (1) research into, and regulation of, hydrogen-  
7 powered vehicles fuel systems integrity, standards,  
8 and safety under subtitle VI of title 49, United  
9 States Code;

10          (2) regulation of hazardous materials transpor-  
11 tation under chapter 51 of title 49, United States  
12 Code;

13          (3) regulation of pipeline safety under chapter  
14 601 of title 49, United States Code;

15          (4) encouragement and promotion of research,  
16 development, and deployment activities relating to  
17 advanced vehicle technologies under section 5506 of  
18 title 49, United States Code;

19          (5) regulation of motor vehicle safety under  
20 chapter 301 of title 49, United States Code;

21          (6) automobile fuel economy under chapter 329  
22 of title 49, United States Code; or

23          (7) representation of the interests of the United  
24 States with respect to the activities and programs  
25 under the authority of title 49, United States Code.



1   **SEC. 809. AUTHORIZATION OF APPROPRIATIONS.**

2           There are authorized to be appropriated to the Sec-  
3   retary to carry out this title, in addition to any amounts  
4   made available for these purposes under other Acts—

5           (1) \$273,500,000 for fiscal year 2004;

6           (2) \$375,000,000 for fiscal year 2005;

7           (3) \$450,000,000 for fiscal year 2006;

8           (4) \$500,000,000 for fiscal year 2007; and

9           (5) \$550,000,000 for fiscal year 2008.